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POLYPEPTIDES AND USES THEREOF

<150> US 09/307,460
<151> 1999-05-07

<170> FastSEQ for Windows Version 3.0

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Asp Lys Val Asn Lys Pro Tyr Leu Pro Leu Ala Ser Gly Glu Tyr Ser	165		170	175	
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Val Asn Thr Gly Ile Ala Ile Val Ala Ser Phe Ser Ile Met Ser Phe	180	185	190	195	
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Trp Leu Gly Trp Ile Val Gly Ser Trp Pro Leu Phe Trp Ala Leu Phe		200	205	210	
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Val Ser Phe Met Leu Gly Thr Ala Tyr Ser Ile Asn Leu Pro Leu Leu	215		220	225	
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Arg Ala Ile Ile Val Gln Ile Ala Phe Tyr Leu His Ile Gln Thr His	245		250	255	
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 Thr Ser Cys Tyr Met Phe Ile Trp Lys Leu Phe Tyr Ala Glu Tyr Leu
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 Leu Leu Pro Phe Leu Lys
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 245 250 255
 Gln Thr His Val Phe Gly Arg Pro Ile Leu Phe Thr Arg Pro Leu Ile
 260 265 270
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 305 310 315 320
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 325 330 335
 Pro Phe Ile Trp Ser Lys Val Ile Ser Val Val Gly His Val Ile Leu
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 Pro Val Arg Pro Gly Ala Ala Arg Pro Arg Asp His Phe Leu Pro Pro
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 Ser Val Ser Leu Leu Ala Val Gln Ser Leu Ser Asp Ile Ser Pro Leu

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Ile Tyr Ile Val Gly Leu Asn Gln Leu Phe Asp Ile Glu Ile Asp Lys			
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240	245		250
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Val Ile Val Gln Leu Ala Phe Phe Leu His Ile Gln Thr Phe Val Phe			
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Gly Gln Lys Lys Val Phe Trp Ile Cys Val Gly Leu Leu Glu Met Ala			
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Tyr Ser Val Ala Ile Leu Met Gly Ala Thr Ser Ser Cys Leu Trp Ser			
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Lys Thr Ala Thr Ile Ala Gly His Ser Ile Leu Ala Ala Ile Leu Trp			
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Cys Ile Leu Thr Val Arg Gly Ile Val Val Asn Leu Gly Leu Phe Leu
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Phe Phe Arg Ile Gly Leu Gly Tyr Pro Pro Thr Leu Ile Thr Pro Ile
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Thr Leu Thr Leu Gln Ile Gly Lys Gln Asn Val Phe Arg Gly Thr Leu
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225 230 235 240

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Leu Val Ile Leu Phe Ala Ala Ala Gly Phe Ser Ile Val Ile Ser Asn				
	180	185	190	
ttt gga cct ttc att acc tct cta tac tgc ctt ggc cta ttt ctt ggc				624
Phe Gly Pro Phe Ile Thr Ser Leu Tyr Cys Leu Gly Leu Phe Leu Gly				
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Thr Ile Tyr Ser Val Pro Pro Phe Arg Leu Lys Arg Tyr Pro Val Ala				
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gcttgagatc tggccccgaa cagatggcgg tggaacggcc aagacaagct tgtttcatgc				1509
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qaaatgacta tataatggt gcaatacgtt gtatatatttc tgagtttcag ctcgtatata				1629

tagtaggaac ctcaactttt accccatcga ttggaagact gaaacttctt gcatgcgtat 1689
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 35 40 45
 Ala Ser Arg Ala Pro Cys Ser Ala Ala Arg Glu His Arg Arg Gly Thr
 50 55 60
 Val Arg Glu Cys Ser Arg Ala Asp Ala Ala Gly Ala Ala Pro Leu Ser
 65 70 75 80
 Lys Thr Leu Leu Asp Leu Lys Asp Ser Cys Trp Arg Phe Leu Arg Pro
 85 90 95
 His Thr Ile Arg Gly Thr Ala Leu Gly Ser Ile Ala Leu Val Ala Arg
 100 105 110
 Ala Leu Ile Glu Asn Ser His Leu Ile Asn Trp Trp Leu Ile Phe Lys
 115 120 125
 Ala Phe Tyr Gly Leu Gly Ala Leu Ile Phe Gly Asn Gly Tyr Ile Val
 130 135 140
 Gly Ile Asn Gln Ile Tyr Asp Val Ala Ile Asp Lys Val Asn Lys Pro
 145 150 155 160
 Tyr Leu Pro Ile Ala Ala Gly Asp Leu Ser Ile Gln Ser Ala Trp Leu
 165 170 175
 Leu Val Ile Leu Phe Ala Ala Ala Gly Phe Ser Ile Val Ile Ser Asn
 180 185 190
 Phe Gly Pro Phe Ile Thr Ser Leu Tyr Cys Leu Gly Leu Phe Leu Gly
 195 200 205
 Thr Ile Tyr Ser Val Pro Pro Phe Arg Leu Lys Arg Tyr Pro Val Ala
 210 215 220
 Ala Phe Leu Ile Ile Ala Thr Val Arg Gly Phe Leu Leu Asn Phe Gly
 225 230 235 240
 Val Tyr Tyr Ala Thr Arg Ala Ala Leu Gly Leu Thr Phe Gln Trp Ser
 245 250 255
 Ser Pro Val Ala Phe Ile Thr Cys Phe Val Thr Leu Phe Ala Leu Val
 260 265 270
 Ile Ala Ile Thr Lys Asp Leu Pro Asp Val Glu Gly Asp Arg Lys Tyr
 275 280 285
 Gln Ile Ser Thr Leu Ala Thr Lys Leu Gly Val Arg Asn Ile Ala Phe
 290 295 300
 Leu Gly Ser Gly Leu Leu Ala Asn Tyr Ile Ala Ala Ile Ala Val
 305 310 315 320
 Ala Phe Thr Met Pro Gln Asp Phe Arg Cys Thr Val Met Val Pro Val
 325 330 335
 His Ala Val Leu Ala Gly Gly Leu Ile Phe Gln Thr Trp Val Leu Glu
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 355 360 365
 Trp Asn Leu Phe Tyr Ala Glu Tyr Ile Phe Phe Pro Leu Ile
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<213> Oryza sativa

<220>

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Met Asp Ser Leu Arg Leu Arg Pro Ser Leu Leu Ala Ala Arg Ala Pro	
1 5 10 15	
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Gly Ala Ala Ser Leu Pro Pro Leu Arg Arg Asp His Phe Leu Pro Pro	
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Leu Cys Ser Ile His Arg Asn Gly Lys Arg Pro Val Ser Leu Ser Ser	
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caa agg acc caa ggt cct tcc ttc gat caa tgt cag aaa ttc ttt ggt	250
Gln Arg Thr Gln Gly Pro Ser Phe Asp Gln Cys Gln Lys Phe Phe Gly	
50 55 60	
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Trp Lys Ser Ser His His Arg Ile Pro His Arg Pro Thr Ser Ser Ser	
65 70 75 80	
gct gac gct tcg gga caa cct cta caa tct tca gct gaa gca cat gat	346
Ala Asp Ala Ser Gly Gln Pro Leu Gln Ser Ser Ala Glu Ala His Asp	
85 90 95	
tca tca agt ata tgg aag cca ata tca tct tct ccg gat gca ttt tac	394
Ser Ser Ser Ile Trp Lys Pro Ile Ser Ser Ser Pro Asp Ala Phe Tyr	
100 105 110	
agg ttt tct cgg cca cat act gtc ata gga aca gca ctt agc ata gtc	442
Arg Phe Ser Arg Pro His Thr Val Ile Gly Thr Ala Leu Ser Ile Val	
115 120 125	
tca gtt tcg ctg cta gct gtt gag aat ttg tcc gat gtg tct ccc ttg	490
Ser Val Ser Leu Leu Ala Val Glu Asn Leu Ser Asp Val Ser Pro Leu	
130 135 140	
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Phe Leu Thr Gly Leu Leu Glu Ala Val Val Ala Ala Leu Phe Met Asn	
145 150 155 160	
atc tat atc gtt gga ttg aat cag ttg ttc gac att gag ata gat aag	586
Ile Tyr Ile Val Gly Leu Asn Gln Leu Phe Asp Ile Glu Ile Asp Lys	
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gtt aac aag cca act ctt cca tta gca tct ggg gaa tat tct cct gca	634
Val Asn Lys Pro Thr Leu Pro Leu Ala Ser Gly Glu Tyr Ser Pro Ala	
180 185 190	
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Thr Gly Val Ala Leu Val Ser Ala Phe Ala Ala Met Ser Phe Gly Leu	
195 200 205	
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Gly Trp Ala Val Gly Ser Gln Pro Leu Phe Leu Ala Leu Phe Ile Ser	

act aga gca gca ctg ggt ctt aca ttc caa tgg agc tcg cct gtt gct	768
Thr Arg Ala Ala Leu Gly Leu Thr Phe Gln Trp Ser Ser Pro Val Ala	
245 250 255	
ttc att aca tgc ttc gtg act tta ttt gct ttg gtc att gct ata acc	816
Phe Ile Thr Cys Phe Val Thr Leu Phe Ala Leu Val Ile Ala Ile Thr	
260 265 270	
aaa gat ctc cca gat gtt gaa ggg gat cgg aag tat caa ata tca act	864
Lys Asp Leu Pro Asp Val Glu Gly Asp Arg Lys Tyr Gln Ile Ser Thr	
275 280 285	
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Leu Ala Thr Lys Leu Gly Val Arg Asn Ile Ala Phe Leu Gly Ser Gly	
290 295 300	
tta ttg ata gca aat tat gtt gct gct att gct gta gct ttt ctc atg	960
Leu Leu Ile Ala Asn Tyr Val Ala Ala Ile Ala Val Ala Phe Leu Met	
305 310 315 320	
cct cag gct ttc agg cgc act gta atg gtg cct gtg cat gct gcc ctt	1008
Pro Gln Ala Phe Arg Arg Thr Val Met Val Pro Val His Ala Ala Leu	
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gcc gtt ggt ata att ttc cag aca tgg gtt ctg gag caa gca aaa tat	1056
Ala Val Gly Ile Ile Phe Gln Thr Trp Val Leu Glu Gln Ala Lys Tyr	
340 345 350	
act aag gat gct att tca cag tac tac cgg ttc att tgg aat ctc ttc	1104
Thr Lys Asp Ala Ile Ser Gln Tyr Tyr Arg Phe Ile Trp Asn Leu Phe	
355 360 365	
tat gct gaa tac atc ttc ttc ccg ttg ata tag agaccaagca atctgatatg	1157
Tyr Ala Glu Tyr Ile Phe Phe Pro Leu Ile *	
370 375	
gtctgcatgt tgagtgcggc aaaaactaga agcccatatg aacagtggga gtaagggaa	1217
gaacatgcc tccatgggaa gactctgata actctctctc gcccgggctg taaagggtaa	1277
gcaactgttg gcatatatat gaaaggaagg tgataaagca gggatgctaa attgctactg	1337
ggatccttaa aggcttatag tggtcaccag tggaaatgtgc cttaataatt tggttacct	1397
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<211> 378
<212> PRT
<213> Oryza Sativa
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			20					25					30				
Pro	Ala	Ser	Pro	Leu	Leu	Ser	Ser	Ala	Ser	Ala	Arg	Phe	Pro	Arg	Ala		
		35					40					45					
Pro	Cys	Asn	Ala	Ala	Arg	Trp	Ser	Arg	Arg	Asp	Ala	Val	Arg	Val	Cys		
	50					55					60						
Ser	Gln	Ala	Gly	Ala	Ala	Gly	Pro	Ala	Pro	Leu	Ser	Lys	Thr	Leu	Ser		

ttt tcc aaa cac ttc aac tca att ggg ttg aac cat cac agt tac aga Phe Ser Lys His Phe Asn Ser Ile Gly Leu Asn His His Ser Tyr Arg 40 45 50	198
tgc tgc tca aat gct gtt cct aag aga ccc caa aga ccc agt tcc ata Cys Cys Ser Asn Ala Val Pro Lys Arg Pro Gln Arg Pro Ser Ser Ile 55 60 65 70	246
agg gcc tgc act gga gtt gga gct gct ggt tct gat cgt cca tta gct Arg Ala Cys Thr Gly Val Gly Ala Ala Gly Ser Asp Arg Pro Leu Ala 75 80 85	294
gaa aga ctt tta gat ttg aaa gat gct tgc tgg aga ttt tta agg cca Glu Arg Leu Leu Asp Leu Lys Asp Ala Cys Trp Arg Phe Leu Arg Pro 90 95 100	342
cat act ata cgt ggt aca gca cta ggt tca ttt gct ttg gtg gca aga His Thr Ile Arg Gly Thr Ala Leu Gly Ser Phe Ala Leu Val Ala Arg 105 110 115	390
gca ttg att gag aac acg aat ttg ata aag tgg tct ctt ttg ttc aaa Ala Leu Ile Glu Asn Thr Asn Leu Ile Lys Trp Ser Leu Leu Phe Lys 120 125 130	438
gct ttc tct ggt ctt ttt gcc ctg att tgt ggg aat ggt tat ata gtt Ala Phe Ser Gly Leu Phe Ala Leu Ile Cys Gly Asn Gly Tyr Ile Val 135 140 145 150	486
ggc atc aat caa atc tat gac att agc att gac aag gta aac aaa cct Gly Ile Asn Gln Ile Tyr Asp Ile Ser Ile Asp Lys Val Asn Lys Pro 155 160 165	534
tat tta cct ata gct gct gga gat ctt tct gtc caa tct gca tgg ttc Tyr Leu Pro Ile Ala Ala Gly Asp Leu Ser Val Gln Ser Ala Trp Phe 170 175 180	582
ttg gtt ata ttt ttt gca gca gct ggc ctg tcg att gca ggg ttg aac Leu Val Ile Phe Phe Ala Ala Ala Gly Leu Ser Ile Ala Gly Leu Asn 185 190 195	630
ttt ggg cct ttc att ttt tct ctt tac aca ctt ggc ctt ttc ttg gga Phe Gly Pro Phe Ile Phe Ser Leu Tyr Thr Leu Gly Leu Phe Leu Gly 200 205 210	678
acc atc tat tct gtt cct cca ttg agg atg aaa cgc ttt cct gtt gca Thr Ile Tyr Ser Val Pro Pro Leu Arg Met Lys Arg Phe Pro Val Ala 215 220 225 230	726
gca ttt ctt ata att gcc acg gta cgt ggt ttt ctc ctt aac ttt ggt Ala Phe Leu Ile Ile Ala Thr Val Arg Gly Phe Leu Leu Asn Phe Gly 235 240 245	774
gtg tac tat gcc act aga gct tcc ctt ggg ctt gca ttt gaa tgg agc Val Tyr Tyr Ala Thr Arg Ala Ser Leu Gly Leu Ala Phe Glu Trp Ser 250 255 260	822
tct cct gtg gtt ttt atc aca aca ttt gta aca ttt ttc gca ctg gta Ser Pro Val Val Phe Ile Thr Thr Phe Val Thr Phe Phe Ala Leu Val 265 270 275	870
att gct ata aca aaa gat ctt cct gat gtt gaa ggt gat cgc aag tat Ile Ala Ile Thr Lys Asp Leu Pro Asp Val Glu Gly Asp Arg Lys Tyr	918

000240 192090

280	285	290	
cag ata tca acc ttt gct aca aaa tta gga gtt cgg aac att gct ttc			966
Gln Ile Ser Thr Phe	Ala Thr Lys Leu Gly	Val Arg Asn Ile Ala Phe	
295	300	305	310
ctt ggt tct gga att ttg ctg gtg aat tat att gtt tct gtt ttg gca			1014
Leu Gly Ser Gly	Ile Leu Leu Val Asn Tyr	Ile Val Ser Val Leu Ala	
	315	320	325
gca att tat atg cct cag gct ttc agg cgt tgg tta ctc ata cca gct			1062
Ala Ile Tyr Met Pro Gln Ala Phe	Arg Arg Trp Leu Leu Ile Pro Ala		
	330	335	340
cat aca att ttt gca ata agc ttg att tac cag gca cga ata tta gaa			1110
His Thr Ile Phe Ala Ile Ser	Leu Ile Tyr Gln Ala Arg Ile Leu Glu		
	345	350	355
caa gca aat tat acc aag gat gca ata tca gga ttc tat cga ttc ata			1158
Gln Ala Asn Tyr Thr Lys Asp Ala Ile Ser Gly Phe Tyr Arg Phe Ile			
	360	365	370
tgg aat ctg ttc tat gct gag tat gca ata ttt cct ttc ata tag			1203
Trp Asn Leu Phe Tyr Ala Glu Tyr Ala Ile Phe Pro Phe Ile *			
	375	380	385
caaaccttgc tacttttttc ttgggaaaag gtgcatacgt gcatagttag agagatcttt			1263
gtttatcaag tgtcaattgg taaactagct atcattatatt ttttaaaatg agtattgttg			1323
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 <213> Glycine max

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Gln Pro Leu Phe Leu Gly Phe Ser Lys His Phe Asn Ser Ile Gly Leu	
	35 40 45
Asn His His Ser Tyr Arg Cys Cys Ser Asn Ala Val Pro Lys Arg Pro	
	50 55 60
Gln Arg Pro Ser Ser Ile Arg Ala Cys Thr Gly Val Gly Ala Ala Gly	
	65 70 75 80
Ser Asp Arg Pro Leu Ala Glu Arg Leu Leu Asp Leu Lys Asp Ala Cys	
	85 90 95
Trp Arg Phe Leu Arg Pro His Thr Ile Arg Gly Thr Ala Leu Gly Ser	
	100 105 110
Phe Ala Leu Val Ala Arg Ala Leu Ile Glu Asn Thr Asn Leu Ile Lys	
	115 120 125
Trp Ser Leu Leu Phe Lys Ala Phe Ser Gly Leu Phe Ala Leu Ile Cys	
	130 135 140
Gly Asn Gly Tyr Ile Val Gly Ile Asn Gln Ile Tyr Asp Ile Ser Ile	
	145 150 155 160
Asp Lys Val Asn Lys Pro Tyr Leu Pro Ile Ala Ala Gly Asp Leu Ser	
	165 170 175
Val Gln Ser Ala Trp Phe Leu Val Ile Phe Phe Ala Ala Ala Gly Leu	
	180 185 190
Ser Ile Ala Gly Leu Asn Phe Gly Pro Phe Ile Phe Ser Leu Tyr Thr	

195 200 205
 Leu Gly Leu Phe Leu Gly Thr Ile Tyr Ser Val Pro Pro Leu Arg Met
 210 215 220
 Lys Arg Phe Pro Val Ala Ala Phe Leu Ile Ile Ala Thr Val Arg Gly
 225 230 235 240
 Phe Leu Leu Asn Phe Gly Val Tyr Tyr Ala Thr Arg Ala Ser Leu Gly
 245 250 255
 Leu Ala Phe Glu Trp Ser Ser Pro Val Val Phe Ile Thr Thr Phe Val
 260 265 270
 Thr Phe Phe Ala Leu Val Ile Ala Ile Thr Lys Asp Leu Pro Asp Val
 275 280 285
 Glu Gly Asp Arg Lys Tyr Gln Ile Ser Thr Phe Ala Thr Lys Leu Gly
 290 295 300
 Val Arg Asn Ile Ala Phe Leu Gly Ser Gly Ile Leu Leu Val Asn Tyr
 305 310 315 320
 Ile Val Ser Val Leu Ala Ala Ile Tyr Met Pro Gln Ala Phe Arg Arg
 325 330 335
 Trp Leu Leu Ile Pro Ala His Thr Ile Phe Ala Ile Ser Leu Ile Tyr
 340 345 350
 Gln Ala Arg Ile Leu Glu Gln Ala Asn Tyr Thr Lys Asp Ala Ile Ser
 355 360 365
 Gly Phe Tyr Arg Phe Ile Trp Asn Leu Phe Tyr Ala Glu Tyr Ala Ile
 370 375 380
 Phe Pro Phe Ile
 385

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 <212> DNA
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 Asn Ile Asn Asn Ala Ser Ser Leu Ala Thr Thr Gly Ser Tyr Leu Pro
 15 20 25

 aat gct tca tgg cac aat agg aaa atc caa aaa gaa tat aat ttt ttg 149
 Asn Ala Ser Trp His Asn Arg Lys Ile Gln Lys Glu Tyr Asn Phe Leu
 30 35 40

 agg ttt cgg tgg cca agt ttg aac cac cat tac aaa agc att gaa gga 197
 Arg Phe Arg Trp Pro Ser Leu Asn His His Tyr Lys Ser Ile Glu Gly
 45 50 55

 ggg tgt aca tgt aaa aaa tgt aat ata aaa ttt gtt gtg aaa gcg acc 245
 Gly Cys Thr Cys Lys Lys Cys Asn Ile Lys Phe Val Val Lys Ala Thr
 60 65 70

 tct gaa aaa tct ttt gag tct gaa cct caa gct ttt gat cca aaa agc 293
 Ser Glu Lys Ser Phe Glu Ser Glu Pro Gln Ala Phe Asp Pro Lys Ser
 75 80 85 90

 att ttg gac tct gtc aag aat tcc ttg gat gct ttc tac agg ttt tcc 341
 Ile Leu Asp Ser Val Lys Asn Ser Leu Asp Ala Phe Tyr Arg Phe Ser

95	100	105	
aga cct cac aca gtt att ggc aca gca tta agc ata att tct gtg tcc			389
Arg Pro His Thr Val Ile Gly Thr Ala Leu Ser Ile Ile Ser Val Ser			
110	115	120	
ctc ctt gct gtt gag aaa ata tca gat ata tct cca tta ttt ttt act			437
Leu Leu Ala Val Glu Lys Ile Ser Asp Ile Ser Pro Leu Phe Phe Thr			
125	130	135	
ggg gtg ttg gag gct gtg gtt gct gcc ctg ttt atg aat att tat att			485
Gly Val Leu Glu Ala Val Val Ala Ala Leu Phe Met Asn Ile Tyr Ile			
140	145	150	
gtt ggt ttg aat caa ttg tct gat gtt gaa ata gac aag ata aac aag			533
Val Gly Leu Asn Gln Leu Ser Asp Val Glu Ile Asp Lys Ile Asn Lys			
155	160	165	170
ccg tat ctt cca tta gca tct ggg gaa tat tcc ttt gaa act ggt gtc			581
Pro Tyr Leu Pro Leu Ala Ser Gly Glu Tyr Ser Phe Glu Thr Gly Val			
175	180	185	
act att gtt gca tct ttt tca att ctg agt ttt tgg ctt ggc tgg gtt			629
Thr Ile Val Ala Ser Phe Ser Ile Leu Ser Phe Trp Leu Gly Trp Val			
190	195	200	
gta ggt tca tgg cca tta ttt tgg gcc ctt ttt gta agc ttt gtg cta			677
Val Gly Ser Trp Pro Leu Phe Trp Ala Leu Phe Val Ser Phe Val Leu			
205	210	215	
gga act gct tat tca atc aat gtg cct ctg ttg aga tgg aag agg ttt			725
Gly Thr Ala Tyr Ser Ile Asn Val Pro Leu Leu Arg Trp Lys Arg Phe			
220	225	230	
gca gtg ctt gca gcg atg tgc att cta gct gtt cgg gca gta ata gtt			773
Ala Val Leu Ala Ala Met Cys Ile Leu Ala Val Arg Ala Val Ile Val			
235	240	245	250
caa ctt gca ttt ttc ctt cac atc cag act cat gta tac aag agg cca			821
Gln Leu Ala Phe Phe Leu His Ile Gln Thr His Val Tyr Lys Arg Pro			
255	260	265	
cct gtc ttt tca aga tca ttg att ttt gct act gca ttc atg agc ttc			869
Pro Val Phe Ser Arg Ser Leu Ile Phe Ala Thr Ala Phe Met Ser Phe			
270	275	280	
ttc tct gta gtt ata gca ctg ttt aag gat ata cct gac att gaa gga			917
Phe Ser Val Val Ile Ala Leu Phe Lys Asp Ile Pro Asp Ile Glu Gly			
285	290	295	
gat aaa gta ttt ggc atc caa tct ttt tca gtg cgt tta ggt cag aag			965
Asp Lys Val Phe Gly Ile Gln Ser Phe Ser Val Arg Leu Gly Gln Lys			
300	305	310	
ccg gta ttc tgg act tgt gtt atc ctt ctt gaa ata gct tat gga gtc			1013
Pro Val Phe Trp Thr Cys Val Ile Leu Leu Glu Ile Ala Tyr Gly Val			
315	320	325	330
gcc ctc ctg gtg gga gct gca tct cct tgt ctt tgg agc aaa att gtc			1061
Ala Leu Leu Val Gly Ala Ala Ser Pro Cys Leu Trp Ser Lys Ile Val			
335	340	345	

acg ggt ctg gga cac gct gtt ctg gct tca att ctc tgg ttt cat gcc 1109
 Thr Gly Leu Gly His Ala Val Leu Ala Ser Ile Leu Trp Phe His Ala
 350 355 360

aaa tct gta gat ttg aaa agc aaa gct tcg ata aca tcc ttc tat atg 1157
 Lys Ser Val Asp Leu Lys Ser Lys Ala Ser Ile Thr Ser Phe Tyr Met
 365 370 375

ttt att tgg aag cta ttt tat gca gaa tac tta ctc att cct ttt gtt 1205
 Phe Ile Trp Lys Leu Phe Tyr Ala Glu Tyr Leu Leu Ile Pro Phe Val
 380 385 390

aga tga ggatgcagcg gcaatattga cttgagaatt agttttgttt aaatgggtgct 1261
 Arg *
 395

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 taaatgaaga tatattttctt ttgggatgaa aaaaaaaaaa aaaaaaaaaa 1370

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 <211> 395
 <212> PRT
 <213> Glycine max

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 20 25 30
 Arg Lys Ile Gln Lys Glu Tyr Asn Phe Leu Arg Phe Arg Trp Pro Ser
 35 40 45
 Leu Asn His His Tyr Lys Ser Ile Glu Gly Gly Cys Thr Cys Lys Lys
 50 55 60
 Cys Asn Ile Lys Phe Val Val Lys Ala Thr Ser Glu Lys Ser Phe Glu
 65 70 75 80
 Ser Glu Pro Gln Ala Phe Asp Pro Lys Ser Ile Leu Asp Ser Val Lys
 85 90 95
 Asn Ser Leu Asp Ala Phe Tyr Arg Phe Ser Arg Pro His Thr Val Ile
 100 105 110
 Gly Thr Ala Leu Ser Ile Ile Ser Val Ser Leu Leu Ala Val Glu Lys
 115 120 125
 Ile Ser Asp Ile Ser Pro Leu Phe Thr Gly Val Leu Glu Ala Val
 130 135 140
 Val Ala Ala Leu Phe Met Asn Ile Tyr Ile Val Gly Leu Asn Gln Leu
 145 150 155 160
 Ser Asp Val Glu Ile Asp Lys Ile Asn Lys Pro Tyr Leu Pro Leu Ala
 165 170 175
 Ser Gly Glu Tyr Ser Phe Glu Thr Gly Val Thr Ile Val Ala Ser Phe
 180 185 190
 Ser Ile Leu Ser Phe Trp Leu Gly Trp Val Val Gly Ser Trp Pro Leu
 195 200 205
 Phe Trp Ala Leu Phe Val Ser Phe Val Leu Gly Thr Ala Tyr Ser Ile
 210 215 220
 Asn Val Pro Leu Leu Arg Trp Lys Arg Phe Ala Val Leu Ala Ala Met
 225 230 235 240
 Cys Ile Leu Ala Val Arg Ala Val Ile Val Gln Leu Ala Phe Phe Leu
 245 250 255
 His Ile Gln Thr His Val Tyr Lys Arg Pro Pro Val Phe Ser Arg Ser
 260 265 270
 Leu Ile Phe Ala Thr Ala Phe Met Ser Phe Phe Ser Val Val Ile Ala
 275 280 285
 Leu Phe Lys Asp Ile Pro Asp Ile Glu Gly Asp Lys Val Phe Gly Ile

290					295					300					
Gln	Ser	Phe	Ser	Val	Arg	Leu	Gly	Gln	Lys	Pro	Val	Phe	Trp	Thr	Cys
305					310					315					320
Val	Ile	Leu	Leu	Glu	Ile	Ala	Tyr	Gly	Val	Ala	Leu	Leu	Val	Gly	Ala
				325					330					335	
Ala	Ser	Pro	Cys	Leu	Trp	Ser	Lys	Ile	Val	Thr	Gly	Leu	Gly	His	Ala
			340					345					350		
Val	Leu	Ala	Ser	Ile	Leu	Trp	Phe	His	Ala	Lys	Ser	Val	Asp	Leu	Lys
		355					360					365			
Ser	Lys	Ala	Ser	Ile	Thr	Ser	Phe	Tyr	Met	Phe	Ile	Trp	Lys	Leu	Phe
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Tyr	Ala	Glu	Tyr	Leu	Leu	Ile	Pro	Phe	Val	Arg					
385					390					395					

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[illegible]

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Leu Ser Phe Leu Ile Gly Val Leu Gln Gly Val Leu Pro Gln Leu Phe	150	155	160	
att gaa att tat ctt tgt ggt gtg aat caa ctg tat gac ctt gaa ata				645
Ile Glu Ile Tyr Leu Cys Gly Val Asn Gln Leu Tyr Asp Leu Glu Ile	165	170	175	
gac aag ata aac aaa cca cat ctt cca atg gca tct gga caa ttt tcc				693
Asp Lys Ile Asn Lys Pro His Leu Pro Met Ala Ser Gly Gln Phe Ser	180	185	190	195
ttt aaa acc ggt gtc att att tct gca gca ttt tta gct ctg agt ttt				741
Phe Lys Thr Gly Val Ile Ile Ser Ala Ala Phe Leu Ala Leu Ser Phe	200	205	210	
gga ttt act tgg att acc ggc tct tgg cca ttg att tgt aat ctt gta				789
Gly Phe Thr Trp Ile Thr Gly Ser Trp Pro Leu Ile Cys Asn Leu Val	215	220	225	
gta atc gct tca tcg tgg acg gct tat tca atc gat gtg ccc cta ctg				837
Val Ile Ala Ser Ser Trp Thr Ala Tyr Ser Ile Asp Val Pro Leu Leu	230	235	240	
aga tgg aag aga tac cca ttt gtc gca gca atg tgc atg att tct act				885
Arg Trp Lys Arg Tyr Pro Phe Val Ala Ala Met Cys Met Ile Ser Thr	245	250	255	
tgg gct ctt gca ttg cca att tca tat ttc cat cac atg cag acc gtt				933
Trp Ala Leu Ala Leu Pro Ile Ser Tyr Phe His His Met Gln Thr Val	260	265	270	275
gtg ttg aag agg cca att ggc ttt cca aga tca ttg ggt ttt ctt gtt				981
Val Leu Lys Arg Pro Ile Gly Phe Pro Arg Ser Leu Gly Phe Leu Val	280	285	290	
gca ttc atg acc ttc tac tcc ttg ggt ttg gca ttg tcc aag gat ata				1029
Ala Phe Met Thr Phe Tyr Ser Leu Gly Leu Ala Leu Ser Lys Asp Ile	295	300	305	
cct gac gtt gaa gga gat aaa gag cac ggc att gat tct ttt gca gta				1077
Pro Asp Val Glu Gly Asp Lys Glu His Gly Ile Asp Ser Phe Ala Val	310	315	320	
cgt cta ggt cag aaa cgg gca ttt tgg att tgc gtt tcc ttt ttt gaa				1125
Arg Leu Gly Gln Lys Arg Ala Phe Trp Ile Cys Val Ser Phe Phe Glu	325	330	335	
atg gct ttc gga gtt ggt atc ctg gcc gga gca tca tgc tca cac ttt				1173
Met Ala Phe Gly Val Gly Ile Leu Ala Gly Ala Ser Cys Ser His Phe	340	345	350	355
tgg act aaa att ttc acg ggt atg gga aat gct gtt ctt gct tca att				1221
Trp Thr Lys Ile Phe Thr Gly Met Gly Asn Ala Val Leu Ala Ser Ile	360	365	370	
ctc tgg tac caa gcc aag tcc gta gat ttg agc gac aaa gct tcc act				1269
Leu Trp Tyr Gln Ala Lys Ser Val Asp Leu Ser Asp Lys Ala Ser Thr	375	380	385	

Phe Phe Glu Met Ala Phe Gly Val Gly Ile Leu Ala Gly Ala Ser Cys
 340 345 350
 Ser His Phe Trp Thr Lys Ile Phe Thr Gly Met Gly Asn Ala Val Leu
 355 360 365
 Ala Ser Ile Leu Trp Tyr Gln Ala Lys Ser Val Asp Leu Ser Asp Lys
 370 375 380
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 Gly Phe Phe Leu Met Ala Leu Ile Arg
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 Ala Thr Leu Phe Met Cys Cys Phe Ser Ala Val Ile Ala Leu Phe Lys
 1 5 10 15
 gat att cct gat gtt gat gga gac cga gat ttt ggc atc caa tcc ttg 96
 Asp Ile Pro Asp Val Asp Gly Asp Arg Asp Phe Gly Ile Gln Ser Leu
 20 25 30
 agt gtg aga ttg ggg cca caa aga gtg tat cag ctc tgc ata agc ata 144
 Ser Val Arg Leu Gly Pro Gln Arg Val Tyr Gln Leu Cys Ile Ser Ile
 35 40 45
 ctg tta aca gcc tat ggg gct gcc act gta gta gga gct tca tcc aca 192
 Leu Leu Thr Ala Tyr Gly Ala Ala Thr Val Val Gly Ala Ser Ser Thr
 50 55 60
 cac cta ctt caa aag atc atc act gtg tct ggc cat ggc ctg ctt gct 240
 His Leu Leu Gln Lys Ile Ile Thr Val Ser Gly His Gly Leu Leu Ala
 65 70 75 80
 gtg aca ctt tgg cag aga gcg cgg cac ctt gag gtt gaa aac caa gcg 288
 Val Thr Leu Trp Gln Arg Ala Arg His Leu Glu Val Glu Asn Gln Ala
 85 90 95
 cgt gtc aca tca ttt tac atg ttc att tgg aag cta ttc tat gca aag 336
 Arg Val Thr Ser Phe Tyr Met Phe Ile Trp Lys Leu Phe Tyr Ala Lys
 100 105 110
 tat ttc ctt ata ccg ttt gtg caa taa aatatt 368
 Tyr Phe Leu Ile Pro Phe Val Gln *
 115 120

<210> 26
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 35 40 45
 Leu Leu Thr Ala Tyr Gly Ala Ala Thr Val Val Gly Ala Ser Ser Thr
 50 55 60
 His Leu Leu Gln Lys Ile Ile Thr Val Ser Gly His Gly Leu Leu Ala
 65 70 75 80
 Val Thr Leu Trp Gln Arg Ala Arg His Leu Glu Val Glu Asn Gln Ala
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 Arg Val Thr Ser Phe Tyr Met Phe Ile Trp Lys Leu Phe Tyr Ala Lys
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 Tyr Phe Leu Ile Pro Phe Val Gln
 115 120

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 His Ala Pro Thr Thr Ala Ala Arg Phe Leu Pro Ala Pro Ala Gly Arg
 15 20 25
 ggc agg cgc ccg tcg ccg ccg gcc gct tca cct atc ttc tcc tct gct 148
 Gly Arg Arg Pro Ser Pro Pro Ala Ala Ser Pro Ile Phe Ser Ser Ala
 30 35 40
 tcc acc cga ttc acc cag tcc ccg cgc gcc ccc tgc ggc gcc gcc cga 196
 Ser Thr Arg Phe Thr Gln Ser Pro Arg Ala Pro Cys Gly Ala Ala Arg
 45 50 55
 ccg cgc tgg cgc gac acc gtg cgg gca tgc tct caa gct ggt gca gct 244
 Pro Arg Trp Arg Asp Thr Val Arg Ala Cys Ser Gln Ala Gly Ala Ala
 60 65 70 75
 ggg cca gct cca ctg tca aag aca tta tca gac cta aag gat tcc tgc 292
 Gly Pro Ala Pro Leu Ser Lys Thr Leu Ser Asp Leu Lys Asp Ser Cys
 80 85 90
 tgg aga ttt tta agg cca cac aca att cgt gga act gct ttg gga tcc 340
 Trp Arg Phe Leu Arg Pro His Thr Ile Arg Gly Thr Ala Leu Gly Ser
 95 100 105
 aca gcc ttg gtt gct aga gca tta tta gag aat ccc caa ttg atc gat 388
 Thr Ala Leu Val Ala Arg Ala Leu Leu Glu Asn Pro Gln Leu Ile Asp
 110 115 120
 tgg cgc ttg gta ttc aaa gca tta tat ggc ctt gta gct ttg atc tgc 436
 Trp Arg Leu Val Phe Lys Ala Leu Tyr Gly Leu Val Ala Leu Ile Cys
 125 130 135
 ggc aac ggt tac att gtt ggg att aat cag atc tat gac att gga att 484

Gly	Asn	Gly	Tyr	Ile	Val	Gly	Ile	Asn	Gln	Ile	Tyr	Asp	Ile	Gly	Ile		
140					145					150					155		
gac	aag	gta	aac	aaa	cca	tat	tta	cct	att	gct	gcc	ggt	gat	ctc	tca		532
Asp	Lys	Val	Asn	Lys	Pro	Tyr	Leu	Pro	Ile	Ala	Ala	Gly	Asp	Leu	Ser		
				160					165					170			
gtt	cag	tca	gca	tggtta	ctg	gtc	gta	gca	ttc	gca	gtg	gtg	ggc	ttc			580
Val	Gln	Ser	Ala	Trp	Leu	Leu	Val	Val	Ala	Phe	Ala	Val	Val	Gly	Phe		
				175				180					185				
tca	ata	gtc	ggt	tca	aac	ttt	gga	cct	ttc	atc	acc	tct	ctt	tac	tgc		628
Ser	Ile	Val	Val	Ser	Asn	Phe	Gly	Pro	Phe	Ile	Thr	Ser	Leu	Tyr	Cys		
				190			195					200					
ctt	ggt	cta	ttt	ctt	ggc	act	ata	tat	tct	ggt	cct	cca	ttc	aga	ctg		676
Leu	Gly	Leu	Phe	Leu	Gly	Thr	Ile	Tyr	Ser	Val	Pro	Pro	Phe	Arg	Leu		
	205					210					215						
aag	aga	tat	cca	ggt	gct	gct	ttt	ctt	atc	att	gcg	acg	ggt	cgt	gga		724
Lys	Arg	Tyr	Pro	Val	Ala	Ala	Phe	Leu	Ile	Ile	Ala	Thr	Val	Arg	Gly		
	220				225					230					235		
ttc	ctt	ctc	aac	ttt	ggg	gtg	tac	tat	gct	act	aga	gct	gca	tta	ggt		772
Phe	Leu	Leu	Asn	Phe	Gly	Val	Tyr	Tyr	Ala	Thr	Arg	Ala	Ala	Leu	Gly		
				240					245					250			
ctt	aca	ttc	caa	tggtta	agc	tcg	ccc	ggt	gct	ttt	att	aca	tgc	ttt	gtg		820
Leu	Thr	Phe	Gln	Trp	Ser	Ser	Pro	Val	Ala	Phe	Ile	Thr	Cys	Phe	Val		
			255				260						265				
aca	gta	ttt	gct	ctg	gtc	att	gct	ata	acc	aaa	gat	ctt	ccg	gat	ggt		868
Thr	Val	Phe	Ala	Leu	Val	Ile	Ala	Ile	Thr	Lys	Asp	Leu	Pro	Asp	Val		
		270					275					280					
gaa	ggg	gac	cgc	aaa	ttc	caa	ata	tca	act	ttg	gcg	aca	aag	ctt	ggt		916
Glu	Gly	Asp	Arg	Lys	Phe	Gln	Ile	Ser	Thr	Leu	Ala	Thr	Lys	Leu	Gly		
	285					290					295						
gtc	aga	aat	att	gcc	ttc	ctt	ggc	tct	ggt	tta	ttg	ttg	gca	aat	tat		964
Val	Arg	Asn	Ile	Ala	Phe	Leu	Gly	Ser	Gly	Leu	Leu	Leu	Ala	Asn	Tyr		
	300				305				310						315		
ggt	ggt	gct	att	gta	gta	cct	ttt	ctt	att	cct	cag	gct	ttc	agg	agc		1012
Val	Val	Ala	Ile	Val	Val	Pro	Phe	Leu	Ile	Pro	Gln	Ala	Phe	Arg	Ser		
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a		b		c		d		e		f		g		h		i		j		k		l		m		n		o		p		q		r		s		t		u		v		w		x		y		z																																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100